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EITAN, PEARL, LATZER & COHEN ZEDEK LLP 10 ROCKEFELLER PLAZA, SUITE 1001 NEW YORK, NY 10020			BARTON, JEFFREY THOMAS	
			ART UNIT	PAPER NUMBER

1753

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,050

Applicant(s)

CABILLY ET AL.

Examiner

Jeffrey T. Barton

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-84 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 15 September 2005 does not place the application in condition for allowance.

Status of Rejections Pending Since the Office Action of 15 March 2005

2. All previous rejections are maintained.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 16, 17, 27, 29, 30, and 45-47, and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Tocci.

Regarding claims 1, 16, and 27, Tocci discloses an electrophoresis unit comprising a chamber defining an electrophoresis area, comprising a gel matrix (In chamber 1) and two sealed regions (Figure 3, entire enclosed volume (1, 6, 7) is an electrophoresis area, sealed regions are indicated at 6 and 7); and an anode and cathode disposed in respective sealed regions 6 and 7, in contact with the gel matrix. (Foil electrodes 8, in contact via semi-solid buffer; Column 2, lines 9-30)

Regarding claim 45, Tocci discloses a device with chamber, electrodes, and gel matrix according to the claim limitations. (Figure 1; Column 4, lines 46-62) In use, assuming an inert electrode, hydroxide ions and protons will be generated at the electrodes, as described in the instant specification at page 1, lines 28-31. This would be inherent upon the application of a sufficient voltage.

Further regarding claim 45, the presence of a buffer that comprises ions would meet the limitations of this claim, since the limitation "said ions generated during an electrochemical reaction of said first electrode" corresponds to intended use of the apparatus, which is not given undue weight.

Regarding claims 2 and 17, Tocci discloses the sealed regions being sealed before and during electrophoresis. (e.g. Figures 4 and 5 - electrode 8 folds out, then is held in position for electrophoresis by the lid after sealing; also support medium 12 disposed on lid provides buffer at the time of use; Column 3, lines 8-24; Column 4, line 55 - Column 5, line 4)

Regarding claims 3, 4, 29, 30, 46, and 47, Tocci discloses metal foil electrodes. (Column 6, lines 10-11) Any metal can be electrochemically ionized under certain conditions.

Regarding claim 51, as the claimed electrochemical reaction of claim 45 corresponded to intended use of the apparatus, this narrowing of that limitation is similarly directed to an intended use, which is not properly given weight in determining patentability.

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5. Claims 1-6, 9, 15-17, 21, 27, 29-32, 37, 44-49, 51, 52, 71, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by Pace.

Regarding claims 1, 16, and 27, Pace discloses an electrophoresis unit comprising a chamber defining an electrophoresis area, comprising a gel matrix (Figure 7, channels can be called "chambers", gel disclosed at Column 10, lines 6-14) and several sealed regions (e.g. Figure 4 - each zone is sealed under cover plate); and anodes and cathodes disposed in sealed regions (Figure 4), in contact with the gel matrix. (Electrodes 12)

Regarding claim 45, Pace discloses a device with chamber, electrodes and gel matrix according to the claim limitations. (Figures 1 and 4; Column 9, line 20 - Column 10, line 20) In use, depending on the choice of electrode material, hydroxide, hydrogen, or metal ions will be inherently be generated by electrolysis upon application of a large enough voltage.

Further regarding claim 45, the presence of a buffer that comprises ions would meet the limitations of this claim, since the limitation "said ions generated during an electrochemical reaction of said first electrode" corresponds to intended use of the apparatus, which is not given undue weight.

Regarding claims 2 and 17, Pace discloses the sealed regions being sealed before and during electrophoresis. (Column 6, lines 46-55 - permanent seal)

Regarding claims 3-6, 29-32, and 46-49, Pace discloses metal electrodes, alternatively made of copper or silver. (Column 7, lines 36-39)

Regarding claims 9, 21, and 37, Pace discloses selection of voltages and electrode spacings to avoid electrolysis of the solution and therefore, keeping the matrix substantially free of hydrogen and oxygen. (Column 9, lines 29-35)

Regarding claims 15, 44, and 52, Pace discloses numerous anodes and cathodes. (e.g. Figure 4)

Regarding claim 51, as the claimed electrochemical reaction of claim 45 corresponded to intended use of the apparatus, this narrowing of that limitation is similarly directed to an intended use, which is not properly given weight in determining patentability. Furthermore, in the case that copper or silver is used for the anode, metal ions will preferentially form rather than water hydrolysis products.

Regarding claims 71 and 72, Pace discloses a method comprising the steps of applying an electrical field to his gel, through copper or silver electrodes. (Column 7, lines 36-39; Column 9, line 38 - Column 10, line 20) Given a high enough voltage, the release of anode ions instead of water electrolysis would be inherent.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 5, 6, 31, 32, 48, 49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci in view of Pace.

Tocci discloses an electrophoresis unit as described above in addressing claims 4, 30, 45, and 47.

Tocci does not explicitly disclose any specific metal for the electrodes.

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Pace discloses an electrophoretic device with copper or silver electrodes.

(Column 7, lines 36-39)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Tocci by using copper electrodes, as taught by Pace, because it would reduce the cost of manufacture compared to the more standard platinum or gold electrodes for a disposable electrophoresis unit.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Tocci by using silver electrodes, as taught by Pace, because it would reduce the cost of manufacture compared to the more standard platinum or gold electrodes for a disposable electrophoresis unit, while still being less reactive than most metal alternatives. (e.g. Cu)

Furthermore, given that Tocci did not specifically suggest any metal, it would be a matter of choice to a skilled artisan to select an appropriate electrode material from those known in the art of electrophoresis, such as copper or silver.

Specific to claim 51, if copper or silver is used for the anode, metal ions will preferentially form rather than water hydrolysis products.

10. Claims 7-9, 33, 34, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci in view of Eibl et al.

Tocci discloses an electrophoresis unit as described above in addressing claims 1, 27, and 45.

Tocci does not explicitly disclose any specific metal for the electrodes.

Eibl et al disclose an electrophoretic device with aluminum electrodes. (Column 3, lines 30-37)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Tocci by using aluminum electrodes, as taught by Eibl et al, because it would reduce the cost of manufacture compared to the more standard platinum or gold electrodes for a disposable electrophoresis unit.

Furthermore, given that Tocci did not specifically suggest any metal, it would be a matter of choice to a skilled artisan to select an appropriate electrode material from those known in the art of electrophoresis, such as aluminum.

Further addressing claims 7, 9, 33, and 50, although Eibl does not specifically address the oxygen-absorbing abilities of aluminum, this is an innate property of the metal and would allow the gel to remain substantially oxygen-free, even if water electrolysis did occur.

11. Claims 7, 8, 33, 34, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace in view of Eibl et al.

Pace discloses an electrophoresis unit as described above in addressing claims 1, 27, and 45.

Pace does not explicitly disclose using aluminum, carbon, or any other oxygen-absorbing material for the electrodes. Pace does disclose using various conductors for the electrodes. (Column 7, lines 36-39)

Eibl et al disclose an electrophoretic device with aluminum electrodes. (Column 3, lines 30-37)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Pace by using aluminum electrodes, as taught by Eibl et al, because it would reduce the cost of manufacture compared to the disclosed gold electrodes.

Furthermore, given that Pace suggested using other metals, it would be a matter of choice to a skilled artisan to select an appropriate electrode material from those known in the art of electrophoresis, such as aluminum.

Further addressing claims 7, 33, and 50, although Eibl does not specifically address the oxygen-absorbing abilities of aluminum, this is an innate property of the metal and would allow the gel to remain substantially oxygen-free, even if water electrolysis did occur.

12. Claims 19-21, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci in view of Flesher et al.

Tocci discloses an electrophoresis unit as described above in addressing claims 16 and 27.

Tocci does not explicitly disclose any specific metal for the electrodes.

Flesher et al disclose an electrophoretic device with palladium electrodes.
(Column 5, lines 29-34)

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Tocci by using palladium electrodes, as taught by Flesher et al, because they are highly resistive to corrosion.

Furthermore, given that Tocci did not specifically suggest any metal, it would be a matter of choice to a skilled artisan to select an appropriate electrode material from those known in the art of electrophoresis, such as palladium.

Further addressing claims 19, 21, and 35, although Flesher et al do not specifically address the hydrogen-absorbing abilities of palladium, this is an innate property of the metal and would allow the gel to remain substantially hydrogen-free, even if water electrolysis did occur.

13. Claims 19, 20, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace in view of Flesher et al.

Pace discloses an electrophoresis unit as described above in addressing claims 16 and 27.

Pace does not explicitly disclose using palladium, carbon, or any other hydrogen-absorbing material for the electrodes. Pace does disclose using various conductors for the electrodes. (Column 7, lines 36-39)

Flesher et al disclose an electrophoretic device with palladium electrodes. (Column 5, lines 29-34)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Pace by using palladium electrodes, as

taught by Flesher et al, because Flesher et al teach the desirability of its resistance to corrosion. (Column 5, lines 29-34)

Furthermore, given that Pace suggested using other metals, it would be a matter of choice to a skilled artisan to select an appropriate electrode material from those known in the art of electrophoresis, such as palladium.

Further addressing claims 19 and 35, although Flesher et al do not specifically address the hydrogen-absorbing abilities of palladium, this is an innate property of the metal and would allow the gel to remain substantially hydrogen-free, even if water electrolysis did occur.

14. Claims 10, 11, 22, 23, and 38-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci in view of Elson et al.

Tocci discloses an electrophoresis unit as described above in addressing claims 1, 16, and 27.

Tocci does not explicitly disclose a unit comprising apertures for sample loading.

Elson et al disclose a gel cassette (Figure 1) wherein samples are applied to the gels through apertures (21) provided in the cover of the gel cassette. (Abstract; Column 2, lines 25-36)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the unit of Tocci by providing a row of apertures in the cover for sample loading, as taught by Elson et al, because Elson et al teaches the

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advantages of this design, in that it allows for a range of sample volumes and allows samples to be applied without opening the instrument. (Column 1, lines 36-38)

Further addressing claims 11, 23, 39, and 40, since the separation medium in Tocci is disposed in the narrow section indicated at 1, the loading apertures would need to be located in this section, leaving the electrode/buffer regions still sealed.

15. Claims 12-14, 24-26, and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci and Elson et al as applied to claims 10, 22, and 38 above, and further in view of Day.

Tocci and Elson et al disclose a combined electrophoresis unit as described above in addressing claims 10, 22, and 38 above.

Specific to claims 13, 25, and 42, Elson et al also disclose these sites being disposed in a row. (Figure 1)

Neither Tocci nor Elson et al explicitly disclose spacing the apertures to conform with intervals between tips on a loader (Claims 12, 24, and 41), or apertures arranged in a stagger format. (Claims 14, 26, and 43)

Day discloses an electrophoresis gel with sample wells spaced to match the spacing of standard multichannel pipettes. (Page 5, line 24 - Page 6, line 23) He also discloses staggered arrangement of wells. (e.g. Figure 4)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the combination of Tocci and Elson et al by spacing the sample application slots taught by Elson to match the 9 mm spacing of

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multichannel pipettes, as taught by Day, because Day teaches the economy of time and labor in sample loading that such an arrangement allows. (Page 5, line 30 - Page 6, line 4)

It would also have been obvious to one having ordinary skill in that art to provide multiple, staggered rows of sample wells, as taught by Day, because Day teaches that this arrangement allows a much more efficient use of the gel space in that many more samples can be run in a single gel. (Page 5, line 10 - Page 6, line 4)

16. Claims 53-56 and 62-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci in view of Pace and Monthony et al.

Regarding claims 53 and 62, Tocci discloses a device with chamber, electrodes, and gel matrix according to the claim limitations. (Figure 1; Column 4, lines 46-62) The gel matrix comprises electrolyte solution (Column 4, lines 43-62), and any metal foil electrode (e.g. Au, Ag, Cu, etc.) is "electrochemically ionizable". With the lid (5) in place, the entire unit is sealed.

Tocci does not explicitly disclose copper or silver electrodes, nor do they require any particular buffer solution.

Relevant to claims 54 and 55, Pace discloses both copper and silver electrodes. (Column 7, lines 36-39)

Relevant to claim 56, Monthony et al disclose electrophoresis methods, one of which involves using a Tris/Glycine buffer for separations at pH 8.9. (Table in Column 4, Example 1)

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Tocci by using copper or silver electrodes, as taught by Pace, because it would reduce the cost of manufacture compared to the more standard platinum or gold electrodes for a disposable electrophoresis unit.

Furthermore, given that Tocci did not specifically suggest any metal, it would be a matter of choice to a skilled artisan to select an appropriate electrode material from those known in the art of electrophoresis, such as copper or silver.

In addition, if copper or silver is used for the anode, metal ions will preferentially form rather than water hydrolysis products.

It would also have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Tocci by using the buffer system disclosed by Monthony et al, because Tocci left this choice up to the skilled artisan using his invention, and one having ordinary skill would be able to select an appropriate buffer for a given separation from those known in the prior art.

The Applicants did not invent Tris/Glycine and the other buffers claimed here. A property not seen in the prior art of record is claimed here, but the discovery of a new property of a known material does not necessarily patentably distinguish the claim. See *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999) and *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). There are no structural distinctions between the claimed invention and the prior art as combined above.

17. Claims 57 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci, Pace, and Monthony et al as applied to claim 53 above, and further in view of Elson et al.

The reasoning for this rejection parallels that given in paragraph 12 above.

18. Claims 58-60 and 67-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tocci, Pace, Monthony, and Elson et al as applied to claim 57 above, and further in view of Day.

The reasoning for this rejection parallels that given in paragraph 13 above.

19. Claims 53-57, 61-66, 70, and 77-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pace in view of Monthony et al.

Regarding claims 53 and 62, Pace discloses a device with chamber, electrodes and gel matrix according to the claim limitations. (Figures 1 and 4; Column 9, line 20 - Column 10, line 20) The gel matrix comprises electrolyte solution (Column 10, lines 6-20), and any metal electrode (e.g. Au, Ag, Cu, etc.) is "electrochemically ionizable". With the cover plate bonded to the channel plate, electrodes within the channel (e.g. in the embodiment of Figure 4) are within the sealed region.

Regarding claims 54, 55, 63, and 64, Pace discloses copper and silver electrodes. (Column 7, lines 36-39)

Regarding claims 57 and 66, Pace discloses apertures corresponding to loading sites. (Column 7, lines 40-41)

Regarding claims 61 and 70, Pace discloses multiple anodes and cathodes. (e.g. Figure 4)

Regarding claims 77-80, Pace discloses a method comprising the steps of applying an electrical field to a gel, through copper or silver electrodes. (Column 7, lines 36-39; Column 9, line 38 - Column 10, line 20) Given a high enough voltage, the release of anode ions instead of water electrolysis would be inherent.

Regarding claims 81-84, Pace discloses apparatuses as described above in addressing claims 4 and 29.

Pace does not explicitly disclose any particular buffer to be used in his apparatus for the separations, calling for only an "appropriate buffer". (Column 10, lines 13-14)

Monthony et al disclose electrophoresis methods, one of which involves using a Tris/Glycine buffer for separations at pH 8.9. (Table in Column 4, Example 1)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Pace by using the buffer system disclosed by Monthony et al, because Pace left this choice up to the skilled artisan using his invention, and one having ordinary skill would be able to select an appropriate buffer for a given separation from those known in the prior art.

In addition, if copper or silver is used for the anode, metal ions will preferentially form rather than water hydrolysis products.

The Applicants did not invent Tris/Glycine and the other buffers claimed here. A property not seen in the prior art of record is claimed here, but the discovery of a new property of a known material does not necessarily patentably distinguish the claim. See

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Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999) and *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). There are no structural distinctions between the claimed invention and the prior art as combined above.

Double Patenting

20. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

21. Claims 18, 28, and 71-76 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 15 of U.S. Patent No. 6,379,516 in view of Tocci. The only difference between instant claims 18 and 28 and claim 15 of U.S. Patent No. 6,379,516 is the location of the electrodes in "sealed regions" of the apparatus. Likewise this "sealed region" recitation is the only significant difference between instant claims 71-76 and claims 30-35 of US 6,379,516. Tocci teaches the value of sealing all portions of an electrophoresis apparatus, in order to reduce solvent evaporation. (Column 4, lines 55-62) Therefore it would be obvious to

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modify the device of claim 15 of U.S. Patent No. 6,379,516 by sealing the chamber (thus including the electrodes in sealed regions), because it would reduce solvent loss.

22. Claims 77-80 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 30 and 31 of U.S. Patent No. 6,379,516 in view of Monthony et al.

It would have been obvious to one having ordinary skill in the art to use known buffers, such as a Tris/Glycine buffer taught by Monthony et al, in the methods claimed here, because Cabilly et al require no particular buffer. The inhibition effect would be as claimed.

Response to Arguments

23. Applicant's arguments filed 15 September 2005 have been fully considered but they are not persuasive. Applicant argues that Tocci does not teach any "sealed region" within his device, and that no electrode of his device is "embedded within said at least one body of the gel matrix". Applicant cites portions of the specification in support of these arguments. However, description of the reasons for sealing the system and asserting that the claims require the regions to be "totally sealed" cannot be the basis for patentability, since limitations from the specification cannot be read into the claims. Furthermore, given the presence of loading wells in this "sealed" system (e.g. Specification, Page 8, lines 14-17), Applicant fails to demonstrate how the instant cassette is "sealed" to any greater extent than Tocci's cassette. Tocci teaches sealing

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the entire cassette (Column 4, lines 55-57), clearly reading on the limitation. Likewise, the limitation to an embedded electrode is clearly anticipated by Tocci. The electrodes are embedded in a semisolid buffer, which comprises buffer solution and fumed silica (i.e. silica gel). As the semisolid buffer is part of the circuit that allows electrophoresis to take place, it facilitates the electrophoresis as claimed.

Regarding Pace et al, Applicant argues that Pace does not disclose a "body of gel matrix". This is simply not the case. At Column 10, lines 6-20, Pace describes preparation of crosslinked gels in the channels, which clearly reads on the "body of gel matrix". Applicant further argues that Pace's system is not sealed, since reservoirs that are open to the atmosphere are in contact with the channels of Pace. The Examiner responds that the regions between these reservoirs in Pace's device are sealed to precisely the same extent as the instantly claimed "sealed regions" spaced from the loading wells of the claimed cassette, which also must be opened to the atmosphere.

For at least these reasons, Applicant's arguments are not persuasive, and all previous rejections are maintained.

Conclusion

24. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Jeffrey Barton, whose telephone number is (571) 272-1307. The examiner can normally be reached Monday-Friday from 8:30 am – 5:00 pm.

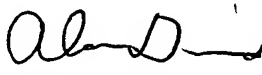
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen, can be reached at (571) 272-1342. The fax number for the organization where this application or proceeding is assigned is (571) 273-8300.

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JTB
21 November 2005


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